# THE SUGAR INDUSTRY

**Government Figures Show That This Industry is on the Wane Because of Artificial Obstacles.**

The exceptionally short run of forty days for the 1914 campaign at the Alma plant of the Michigan Sugar Co. occasioned some surprise to Alma people for though acreage was not much less than in former years the tonnage was much lighter and the yield of sugar correspondingly less. However, the same conditions are to be found in all states where beets are raised for the sugar industry. Had the company and the farmers anticipated the outbreak of the European war and the great demand for this staple in the foreign countries they might have made better preparations to meet it. Without a doubt the cause of the disastrous blows which the beet sugar industry has received in the last two years can be laid directly at the door of the new tariff law which provided for the removal of all tariff on sugar by 1915.

According to the government's crop review for 1914, of date November 23, the preliminary estimate covering the United States' beet crop and sugar output, the area harvested falls short of 1913 by 94,000 acres, and of 1912 by 69,000 acres, the figures being 486,000 acres in 1914, 580,000 acres in 1913 and 555,300 acres in 1912.

The beet tonnage is estimated to be 500,000 tons less than in the preceding campaign, and short of 1912 by 77,377 tons, being respectively 5,147,000, 5,659,463 and 5,224,377 tons. While the total tonnage fell off, still the average yield per acre in 1914, 10.6 tons, was greater than either 1913 or 1912, being exceeded only twice in the last fourteen years, in 1911 when it was 10.68 and in 1906 when it averaged 11.26 tons to the acre.

The sugar extraction ton of beets, it is estimated, will average for the United States for the 1914 campaign 12.9 percent, about the same as 1913, when it was 12.96 percent, but below 1912, when it was 13.26 percent. The three last campaigns show the highest average extraction for the United States during the last fourteen years, the next highest being in 1910, when the extraction averaged 12.61 percent.

Details of the government's figures for 1914 show that California harvested about 20,000 acres less beets than in 1913 and 4,000 less than in 1912. The per acre yield was 9.3 tons in 1914 and 8.92 tons and 9.01 tons respectively for 1913 and 1912.

Colorado's acreage fell off by 36,410 when compared with 1913, and 12,9999 acres compared with 1912, the figures being 132,000 acres in 1914, 168,410 in 1913 and 144,999 in 1912. The average per acre yield was 11.7 tons against 10,93 tons in 1913 and 11.32 tons in 1912. The average extraction was 13.5 in 1914, and 13.31 and 1912, being respectively 12.3, 12.46 and 13.16 percent.

The acreage in Michigan was 100,000, against 107,965 in 1913 and 124,241 acres in 1912. The average tonnage per acre exceeded the two preceding years, being 9.2 tons in 1914, and 8.85 and 6.75 tons for the two years previous. The average extraction will fall a fraction below 1913 but exceeds that of 1912, being respectively 12.5, 12.82 and 11.33 percent.

Idoho and Utah are the two exceptions, both showing increased acreage and tonnage. In the former the acreage was 25,000 in 1914 against 22,497 and 19,952 acres the two previous years. The average tonnage per acre was 10.5 in 1914 and 9.9 and 8.55 tons in 1913 and 1912. The average extraction was 14.51 the two years previous.

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In Utah the acreage was 42,000 against 39,472 in 1913 and 37,000 acres in 1912; the average tonnage per acre was 13.5 in 1914 and 12.21 and 12.03 tons the two previous years. The average extraction was 13 percent, falling below 1912, which was 13.38 per cent, but exceeding 1913, when the average was 11.88 percent.

In the group of states having a single factory each, the total tonnage was 63,000 acres, from which 671,000 tons of beets was harvested, or an average yield of 10.7 tons. While the acreage was short of 1913 (83,391 tons) and 1912 (90,630 tons), still the average yield per acre exceeded both 1913 (9.48 tons) and 1912 (9.78 tons).

The average extraction in the States so grouped, 12.4 percent in 1914, exceeded that of 1913, 12.16 per cent, it fell a little below 1912, when it was 12.75 percent.

There were in operation during the campaign of 1914 sixty beet sugar factories in the United States out of a total of seventy-five, the others deciding not to operate, and, therefore, having no acreage at the time the war came on and temporarily changed the complexion of things.

**NOTICE.**

Notice is hereby given that the special assessors for Bridge Avenue Sewer District, having filed with the city clerk the special assessment roll for Bridge Avenue Sewer, said roll is now on file for inspection and the Board of Review for said special assessment roll will be in session at the council rooms in said city hall on Tuesday, the 29th day of December A. D. 1914, from 7 o'clock to 10 o'clock in the afternoon to hear any objections made or filed thereto.

Dated, Alma, Mich., Dec. 5, 1914.

D. W. ADAMS, City Clerk.

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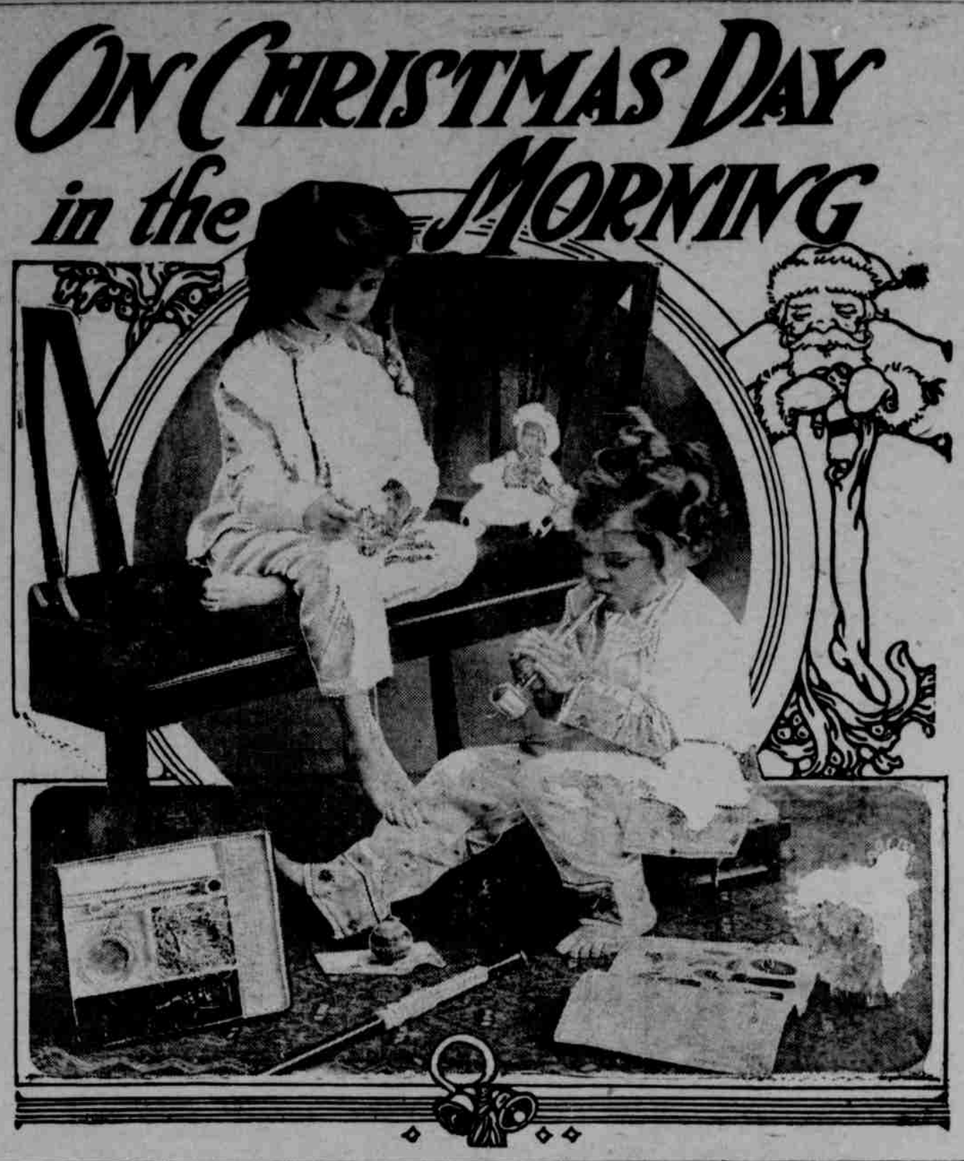


## ALMA HIGH SCHOOL.

**Natural Science Department.**

The study of nature in the public high schools has always held a minor position, being entirely elective for a period of five or ten months only. Very largely thruout the state, teachers especially prepared in other branches have been given this to teach as their minor subject, thus forcing many who have not even had a high school course or but a summer course in biology, to do what they can to instruct themselves.

At the present time conditions are much better. Special biology teachers are hired, fairly well equipped laboratories are provided in many schools, and more emphasis is being placed upon the course. Then the influence of scientific and biological investigation carried on by the United States government and experimental stations, and those of such men as Asa Gray, Burbank, Darwin, Pasteur, Kellogg, and many other scientists, the public is awakening to the importance of biology and to its close relation to human welfare and activities.

In the Alma high school, one year of botany and one of zoology is given, and a semester of physiology, physiograthy and commercial geography completes the schedule of this department. The laboratory is exceptionally well equipped for high school work in as much as it has eight compound microscopes, a dozen hand dissenting lenses, plenty of demonstration material, such as preserved specimens both plant and animal and a small museum or collection of shells, relics, moths, birds, bird's eggs, and skins of a few animals. Living material such as thrive in an aquarium, crayfishes, leeches, goldfishes, turtles, angle worms, clams, as well as plants, both water and gouse, are kept here and studied. The work is further enhanced by the use of the stereoptican lantern.

The student in biology is made acquainted with the forms of life that he must come in contact with and upon those which he is either directly or indirectly dependent upon for his own life. A love for the wonders of nature, a respect for life, a keen, wide-awake interest in relationships,—in connection with the economic import, is the lesson biology attempts to teach through the study of the anatomy and life history of plants, animals and humanity as well as of physiography.

Many field trips are taken to acquaint the student with the life forms in their natural environment. Trees, flowers, plants, land and water animals are thus studied while at work. A detailed study of the habits, external and internal structures of these then follows in the laboratory and a notebook is made by each student thus recording by means of drawings, experiments, field observaions, and articles, the knowledge gained.

The course in botany as offered provides a study in the fall and winter of the character and work of seeds and fruit; all questions pertaining to plant physiology, i. e. the working or life processes of the roots, the fall flowers; the trees in their winter garb; the relation of plants to their surroundings, such as light, moisture, earth orgravity, and man. Many experiments in plant physiology gives a new idea to the student that plants are living, breathing organisms accomplishing in a number of marvelous ways, tasks upon which our existence vitally depends. Te learns the need of germinating seeds, a few methods of plant husbandry. The trees are studied and distinguished by their buds, characteristic shape of tree, and by the bark. In the spring a general idea of the entire plant kingdom from the lowest one celled plants to the highest is given. This includes many undreamed of facts for the student, about molds, bacteria, and their relation to disease, acum on ponds, horse tails or the so-called scouring reeds, mosses, ferns and a host of other hidden beauties to the unsuspecting. The trees are again studied and identified by their leaves. The spring flowers are learned and a small herbarium made.

In zoology, forms that are our every day acquaintances in the field are studied. The insects are grouped and a collection made. The work of the bee and its wonderful structure, the beauties of the butterfly, the economic importance of all beetles and bugs, the angle worms, clams, crayfish, minonws, and a host of other forms from the lowest to the highest, all come in for their share of notice. The habits, the development of the senses, the importance to man, either detrimental or beneficial, and the internal anatomy are discussed and additional information gained thru special reports from the United States agricultural bulletins and from other sources. The bird study forms a very important as well as interesting part of this course. The common birds that winter with us and those that are only summer residents are identified. An acquaintance of the habits, food and appearance of each of hose birds is acquired by many field observations correlated by the use of the mounted specimens and special reports. The migration both of fall and spring, seasonal changes of plumage, mimicry, and protective coloration are a few of the topics studied. Special stress is laid upon their economic value, especially the beneficial effect of many birds so commonly regarded as "sinners or robbers." The hawk and sparrow question, the crow, and the jay are among these. Both in zoology and botany, the knowing of a few definite forms gives the student more interest in his surroundings, makes him see more—a keener observer, and gives him an appreciation of the beauty of flowers and trees about the home. Because of a knowledge of the life habits he is in a position to care for and maintain about his property, plants and animals benefical to him, thus enhancing its value.

In physiology much laboratory work is done upon the various systems and organs studied in the grades. Circulation of blood in a frog's foot, the nature of cells of nerves, of muscles, and of bone are observed thru the microscope. First hand knowledge by means of the dissection of a frog (by the instructor) is gained of the beating of the heart, the position and wonderful structures of the organs of digestion, respiration, and of the nervous system. Analysis of foods as to the composition and tests is made. Round table discussions are sometimes carried on regarding the care of the various systems and other important topics of hygiene are emphasized. Sensible suggestions that bear directly upon the school habits of the students are made—such as the value of plenty of fresh air in sleeping room and school, of vigorous outdoor exercise, of hygienic clothing and footwear, of the seriousness of colds; of the importance of pure blood; of the vital conection of right living, right eating, to the health of body; of the dangers of physical and mental exhaustion and of the need and method of increasing our energy; the importance of a well-shaped, perfect skeleton and an even toned, self controlled nervous system.

Physiciography takes up the subject of the earth's relation in the universe; the relation of the physical features to all life forms; the atmosphere; climatic fastors, such as temperature, moisture, pressure, winds, storm; glaciers, volcanoes; the work of ice and snow, of rivers, winds and similar geographic subjects. Several field trips are taken to the college museum where roots, minerals and ohter geological formations are studied; to Pine River for all formations due to its action; and to the sand pit. Laboratory work correlates with field and text book. The weather is observed for a definite period by each student, the pressure, temperature, direction of wind and the character of precipitation being recorded. A map is then made using the data thus gained and the U. S. daily weather maps are studied. The glacial period of North America and Europe is charted and its effect upon the life of the continent noted. The formation of the Great Lakes region is investigated and the various stages charted. In this way a rather brief notion is given of some of the earht's gigantic processes and wonderful phenomena.

The practicality of nature study is often made light of by the unthinking public but its value is gradually becoming known. To be out of touch with nature ,to have eyes and yet not see the wonders of nature, to have to cope with the forces of nature without understanding their laws is a deplorable condition. Natural Science is one of the subjects whose aim it is to do away with his state and put one in a congenial understanding relation with his surroundings.

**W. C. T. U.**

Last Saturday afternoon the W. C. T. U. met at the High School building in the commercial room instead of in a private home. The reason for the change of place was that a very large attendance was expected to hear Mrs. Norma Mudge of St. Louis speak on the subject of "Purity." Because Mrs. Mudge's husband was so very ill, at the last moment, she was unable to leave him. Mrs. Wood, president of the local union, took charge of the meeting and a free discussion on the subject proved both interesting and helpful. A good number of mothers and teachers were present.

**Press Comments.**

In the state of Ohio, "Home Rule" won by 8,300 votes. That majority is pitiful, when it is contemplated from a sane viewpoint. It means that Cincinnati, notorious for its breweries, distilleries and liquor violators, opened forty-five dry counties in this state to booze.—South Liverpool (O.) Tribune.

The fact is the liquor interests have tricked the people of Ohio in this matter (the "Home Rule" amendment). That trickery will react against them as certainly as the sun shines. The reckoning when it comes will be more certain and complete than otherwise it could have been. We are sure of this because we have confidence in the ultimate wisdom and righteousness of popular government. The triumph of the wet amendment means that the state campaign against the liquor traffic must go on. The people cannot rest content under the infamous conditions which this amendment will produce. This liquor victory is the first step toward the eventual and certain overthrow of saloon politics and the saloon in Ohio.

The people of Colorado won a very important victory when they decided that the saloon must go, but the biggest battle is still ahead of us and will begin on January 1, 1916. This battle will be a contest between the whisky devil and the forces of righteousness to see whether the people who voted for prohibition meant what they said as to having a dry state. Prohibition will be a success from the jump if we have the spunk to make it so. Hence we can spend the next fourteen months to good advantage in the development of the amount of good citizenship spunk necessary to make Colorado a dry state. In fact as well as in theory. And every good citizen who deserves the name will join in this effort regardless as to how he voted on the question last week. There may be an honest difference of opinion as to the desirability or the undesirability or the saloon method of handling the liquor traffic, but when it comes to upholding the dignity of the law there are no two sides to the argument.—Montrose (Colo.) Enterprise.

## SUMNER ITEMS

(Intended for last week)

Leet Adams and Mr. Doan of Alma were Sumner business callers Monday.

Clare Wood, who has been in Lakeview the past few months, is home with his grandparents, J. Wood and wife for a short visit.

Philip Hicks made a business trip to Ithaca Thursday.

F. J. Tucker did business in Belding and Greenville last week.

Charlie Hicks and family of Ferris visited with his parents here Monday.

Emory Mulford went to Ann Arbor after his daughter Ruth, who has been taking treatment at the University hospital.

Phillip Hicks and son Charles made a business trip to Alma Monday.

Miss Reah Seaman, who teaches school in Riverdale, was home over Sunday.

O. Lampson and daughter of Edmore were Sumner callers Monday.

Joe Cooly and wife have moved on their place west of town.

Lottie Pelton and Mary Powell of Elwell visited the former's parents, Mr. and Mrs. Wm. Pelton Sunday.

Mr. and Mrs. Calvin Haines of Elwell spent the week end with their daughter, Mrs. George Dalrymple.

William Fowler, who has been ill with tonsilitis, is able to be out again.

Mrs. O. Monks and Mrs. Bertha Cleverdon shopped in Ithaca Tuesday.